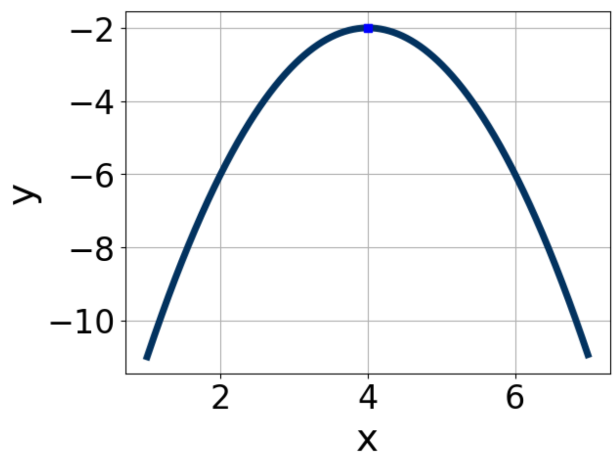
1. Write the equation of the graph presented below in the form $f(x) = ax^2 + bx + c$, assuming $a = 1$ or $a = -1$. Then, choose the intervals that $a, b,$ and c belong to.



A. $a \in [-1.3, 0], \quad b \in [4, 10], \text{ and } \quad c \in [-18, -16]$

B. $a \in [0.4, 1.5], \quad b \in [4, 10], \text{ and } \quad c \in [10, 15]$

C. $a \in [0.4, 1.5], \quad b \in [-10, -5], \text{ and } \quad c \in [10, 15]$

D. $a \in [-1.3, 0], \quad b \in [-10, -5], \text{ and } \quad c \in [-18, -16]$

E. $a \in [-1.3, 0], \quad b \in [-10, -5], \text{ and } \quad c \in [-14, -9]$

---

2. Solve the quadratic equation below. Then, choose the intervals that the solutions x_1 and x_2 belong to, with $x_1 \leq x_2$.

$$25x^2 - 60x + 36 = 0$$

A. $x_1 \in [-0.17, 0.3]$ and $x_2 \in [5.29, 6.08]$

B. $x_1 \in [0.41, 0.76]$ and $x_2 \in [2.12, 2.75]$

C. $x_1 \in [0.34, 0.44]$ and $x_2 \in [2.63, 4.78]$

D. $x_1 \in [1.11, 1.3]$ and $x_2 \in [0.47, 1.4]$

E. $x_1 \in [29.67, 30.12]$ and $x_2 \in [29.21, 30.44]$

---

3. Factor the quadratic below. Then, choose the intervals that contain the constants in the form $(ax+b)(cx+d); b \leq d$.

$$24x^2 + 2x - 15$$

A. $a \in [10.31, 12.79], \quad b \in [-3, 0], \quad c \in [1.45, 3.07], \text{ and } \quad d \in [0, 7]$

B. $a \in [1.21, 2.53], \quad b \in [-3, 0], \quad c \in [11.98, 12.04], \text{ and } \quad d \in [0, 7]$

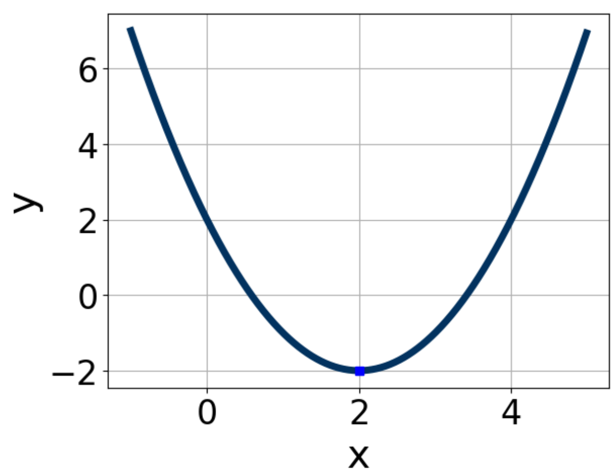
C. $a \in [0.14, 1.79], \quad b \in [-20, -12], \quad c \in [-0.18, 1.72], \text{ and } \quad d \in [18, 22]$

D. $a \in [2.38, 4.11], \quad b \in [-3, 0], \quad c \in [4.37, 6.28], \text{ and } \quad d \in [0, 7]$

E. None of the above.

---

4. Write the equation of the graph presented below in the form $f(x) = ax^2 + bx + c$, assuming $a = 1$ or $a = -1$. Then, choose the intervals that $a, b,$ and c belong to.



A. $a \in [1, 3], \quad b \in [-6, -3], \text{ and } \quad c \in [1, 4]$

B. $a \in [-2, 0], \quad b \in [-6, -3], \text{ and } \quad c \in [-7, -4]$

C. $a \in [-2, 0], \quad b \in [3, 7], \text{ and } \quad c \in [-7, -4]$

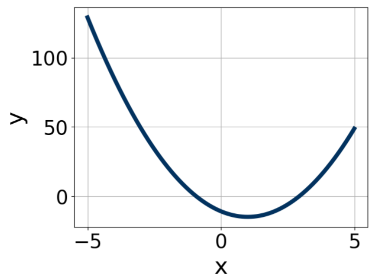
D. $a \in [1, 3], \quad b \in [3, 7], \text{ and } \quad c \in [1, 4]$

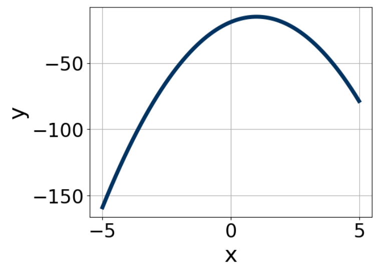
E. $a \in [1, 3], \quad b \in [3, 7], \text{ and } \quad c \in [6, 8]$

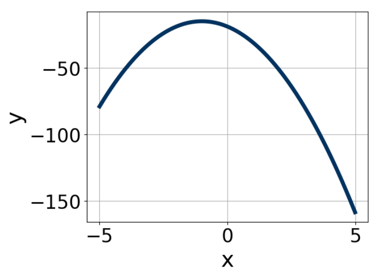
---

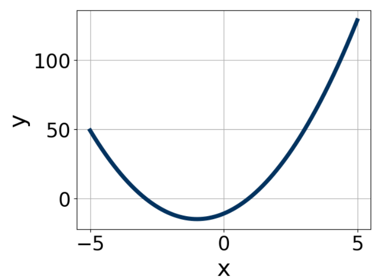
5. Graph the equation below.

$$f(x) = (x-1)^2 - 15$$

A. 

C. 

B. 

D. 

E. None of the above.

---

6. Solve the quadratic equation below. Then, choose the intervals that the solutions belong to, with $x_1 \leq x_2$ (if they exist).

$$-19x^2 - 13x + 4 = 0$$

A. $x_1 \in [-2.01, -0.76]$ and $x_2 \in [-0.3, 0.68]$

B. $x_1 \in [-23.26, -21.68]$ and $x_2 \in [21.39, 22.14]$

C. $x_1 \in [-0.7, 0.91]$ and $x_2 \in [0.37, 1.52]$

D. $x_1 \in [-5.5, -3.85]$ and $x_2 \in [17.2, 17.52]$

E. There are no Real solutions.

---

7. Solve the quadratic equation below. Then, choose the intervals that the solutions x_1 and x_2 belong to, with $x_1 \leq x_2$.

$$12x^2 - 11x - 36 = 0$$

A. $x_1 \in [-16.44, -15.72]$ and $x_2 \in [26.49, 27.56]$

B. $x_1 \in [-3.53, -2.27]$ and $x_2 \in [1.11, 1.35]$

C. $x_1 \in [-1.36, -0.79]$ and $x_2 \in [1.98, 2.27]$

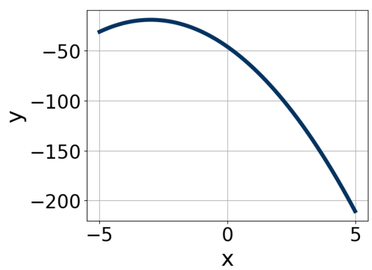
D. $x_1 \in [-0.82, 0.13]$ and $x_2 \in [6.53, 7]$

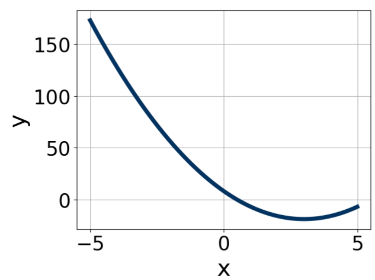
E. $x_1 \in [-4.47, -3.68]$ and $x_2 \in [0.71, 0.81]$

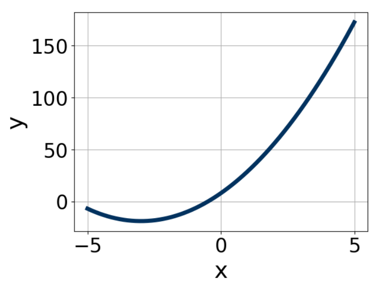
---

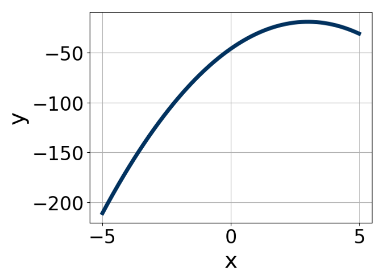
8. Graph the equation below.

$$f(x) = -(x-3)^2 - 19$$

A. 

C. 

B. 

D. 

E. None of the above.

---

9. Solve the quadratic equation below. Then, choose the intervals that the solutions belong to, with $x_1 \leq x_2$ (if they exist).

$$12x^2 + 7x - 9 = 0$$

A. $x_1 \in [-1.2, -0.18]$ and $x_2 \in [0.9, 2.8]$

B. $x_1 \in [-2.69, -1.12]$ and $x_2 \in [-0.1, 1.2]$

C. $x_1 \in [-22.99, -21.32]$ and $x_2 \in [21, 23.8]$

D. $x_1 \in [-14.62, -14.4]$ and $x_2 \in [5.7, 8.9]$

E. There are no Real solutions.

---

10. Factor the quadratic below. Then, choose the intervals that contain the constants in the form $(ax+b)(cx+d); b \leq d$.

$$24x^2 + 2x - 15$$

A. $a \in [-0.18, 1.9], \quad b \in [-24, -17], \quad c \in [-0.9, 1.2], \text{ and } \quad d \in [19, 23]$

B. $a \in [11.49, 13.43], \quad b \in [-6, -1], \quad c \in [1.4, 2.5], \text{ and } \quad d \in [2, 11]$

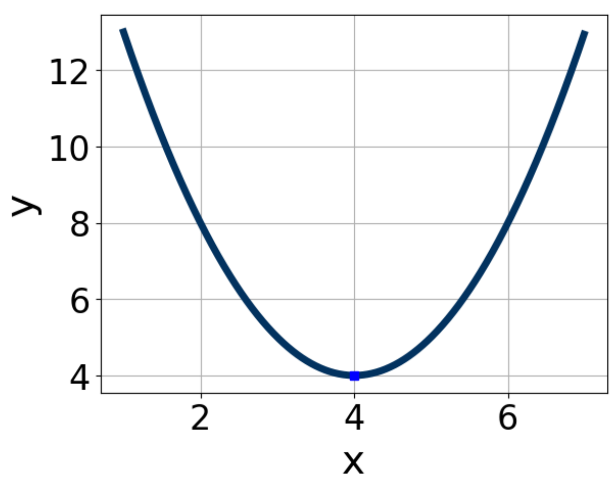
C. $a \in [1.58, 2.63], \quad b \in [-6, -1], \quad c \in [10.2, 13.3], \text{ and } \quad d \in [2, 11]$

D. $a \in [3.9, 5.36], \quad b \in [-6, -1], \quad c \in [4.6, 6.6], \text{ and } \quad d \in [2, 11]$

E. None of the above.

---

11. Write the equation of the graph presented below in the form $f(x) = ax^2 + bx + c$, assuming $a = 1$ or $a = -1$. Then, choose the intervals that $a, b,$ and c belong to.



A. $a \in [-2.5, -0.1], \quad b \in [5, 10], \text{ and } \quad c \in [-13, -8]$

B. $a \in [-2.5, -0.1], \quad b \in [-11, -6], \text{ and } \quad c \in [-13, -8]$

C. $a \in [-0.4, 2.4], \quad b \in [-11, -6], \text{ and } \quad c \in [20, 22]$

D. $a \in [-0.4, 2.4], \quad b \in [5, 10], \text{ and } \quad c \in [20, 22]$

E. $a \in [-0.4, 2.4], \quad b \in [5, 10], \text{ and } \quad c \in [11, 17]$

---

12. Solve the quadratic equation below. Then, choose the intervals that the solutions x_1 and x_2 belong to, with $x_1 \leq x_2$.

$$25x^2 + 10x - 24 = 0$$

A. $x_1 \in [-1.72, -0.86]$ and $x_2 \in [0.63, 1.34]$

B. $x_1 \in [-2.91, -2.08]$ and $x_2 \in [0.24, 0.61]$

C. $x_1 \in [-6.27, -5.37]$ and $x_2 \in [0.07, 0.26]$

D. $x_1 \in [-30.9, -29.8]$ and $x_2 \in [19.64, 20.07]$

E. $x_1 \in [-0.71, -0.21]$ and $x_2 \in [1.44, 2.11]$

---

13. Factor the quadratic below. Then, choose the intervals that contain the constants in the form $(ax + b)(cx + d); b \leq d$.

$$16x^2 - 8x - 15$$

A. $a \in [3.09, 4.32], \quad b \in [-7, 2], \quad c \in [3.36, 4.31], \text{ and } \quad d \in [-3, 8]$

B. $a \in [7.27, 8.73], \quad b \in [-7, 2], \quad c \in [1.7, 2.33], \text{ and } \quad d \in [-3, 8]$

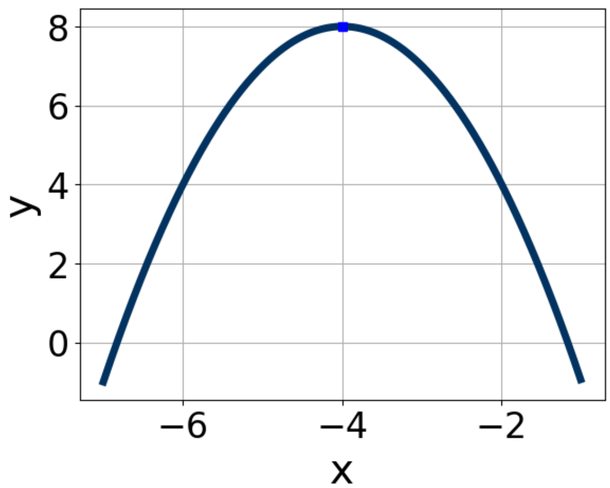
C. $a \in [0.89, 1.59], \quad b \in [-26, -15], \quad c \in [0.43, 1.16], \text{ and } \quad d \in [10, 15]$

D. $a \in [1.85, 2.78], \quad b \in [-7, 2], \quad c \in [7.25, 8.92], \text{ and } \quad d \in [-3, 8]$

E. None of the above.

---

14. Write the equation of the graph presented below in the form $f(x) = ax^2 + bx + c$, assuming $a = 1$ or $a = -1$. Then, choose the intervals that $a, b,$ and c belong to.



A. $a \in [-3, 0], \quad b \in [8, 12], \text{ and } \quad c \in [-9, -4]$

B. $a \in [-3, 0], \quad b \in [-11, -6], \text{ and } \quad c \in [-9, -4]$

C. $a \in [-3, 0], \quad b \in [8, 12], \text{ and } \quad c \in [-26, -22]$

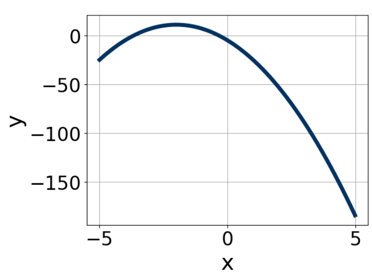
D. $a \in [1, 4], \quad b \in [-11, -6], \text{ and } \quad c \in [22, 27]$

E. $a \in [1, 4], \quad b \in [8, 12], \text{ and } \quad c \in [22, 27]$

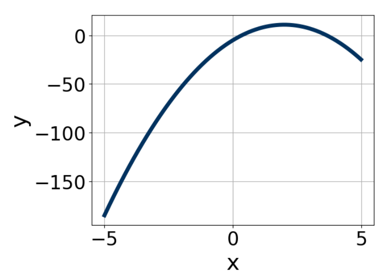
---

15. Graph the equation below.

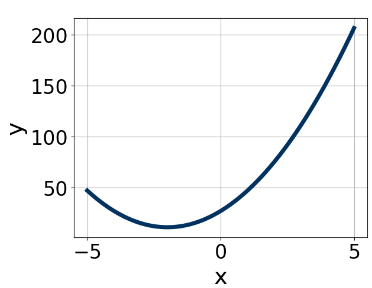
$$f(x) = (x - 2)^2 + 11$$



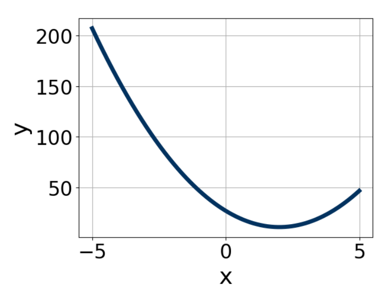
A.



C.



B.



D.

E. None of the above.

---

16. Solve the quadratic equation below. Then, choose the intervals that the solutions belong to, with $x_1 \leq x_2$ (if they exist).

$$-10x^2 - 15x + 2 = 0$$

A. $x_1 \in [-19.3, -16.5]$ and $x_2 \in [16.6, 17.1]$

B. $x_1 \in [-0.5, 1.1]$ and $x_2 \in [1.3, 2.2]$

C. $x_1 \in [-3.6, -1.4]$ and $x_2 \in [-0.6, 0.6]$

D. $x_1 \in [-1.6, -0.9]$ and $x_2 \in [16.2, 16.5]$

E. There are no Real solutions.

---

17. Solve the quadratic equation below. Then, choose the intervals that the solutions x_1 and x_2 belong to, with $x_1 \leq x_2$.

$$25x^2 + 60x + 36 = 0$$

A. $x_1 \in [-3.4, -1.82]$ and $x_2 \in [-0.68, -0.56]$

B. $x_1 \in [-4.42, -3.57]$ and $x_2 \in [-0.58, -0.25]$

C. $x_1 \in [-1.43, -0.68]$ and $x_2 \in [-1.26, -1.18]$

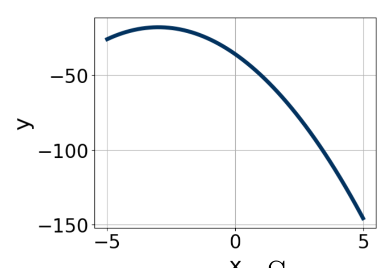
D. $x_1 \in [-6.71, -4.51]$ and $x_2 \in [-0.35, -0.02]$

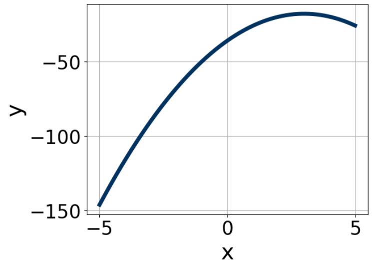
E. $x_1 \in [-30.83, -29.51]$ and $x_2 \in [-30.04, -29.95]$

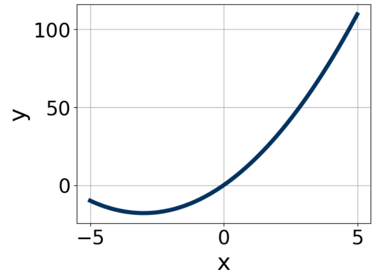
---

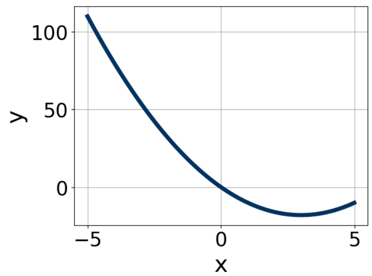
18. Graph the equation below.

$$f(x) = -(x-3)^2 - 18$$

A. 

B. 

D. 

C. 

E. None of the above.

---

19. Solve the quadratic equation below. Then, choose the intervals that the solutions belong to, with $x_1 \leq x_2$ (if they exist).

$$18x^2 - 14x - 6 = 0$$

A. $x_1 \in [-25.9, -23.6]$ and $x_2 \in [24.99, 25.75]$

B. $x_1 \in [-6.8, -4.8]$ and $x_2 \in [18.51, 19.73]$

C. $x_1 \in [-2.6, -0.4]$ and $x_2 \in [-0.51, 0.31]$

D. $x_1 \in [-0.6, -0.2]$ and $x_2 \in [0.98, 1.55]$

E. There are no Real solutions.

---

20. Factor the quadratic below. Then, choose the intervals that contain the constants in the form $(ax + b)(cx + d); b \leq d$.

$$36x^2 + 7x - 15$$

A. $a \in [1.2, 4.7], \quad b \in [-11, 5], \quad c \in [6.3, 8.6],$ and $\quad d \in [2, 5]$

B. $a \in [6.8, 9.5], \quad b \in [-11, 5], \quad c \in [1.8, 4.8],$ and $\quad d \in [2, 5]$

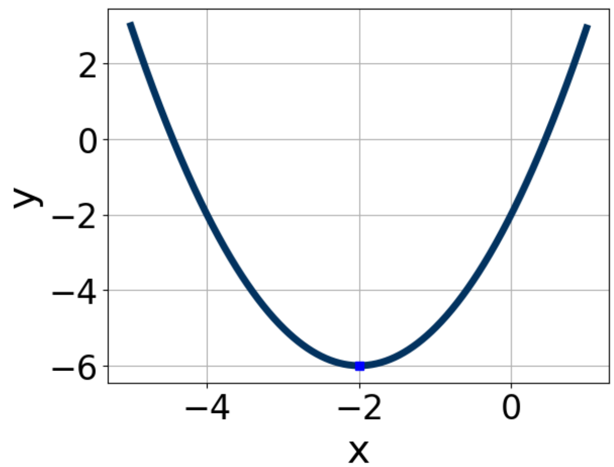
C. $a \in [26.6, 27.8], \quad b \in [-11, 5], \quad c \in [-0.9, 1.5], \text{ and } \quad d \in [2, 5]$

D. $a \in [-0.1, 2.7], \quad b \in [-24, -16], \quad c \in [-0.9, 1.5], \text{ and } \quad d \in [27, 30]$

E. None of the above.

---

21. Write the equation of the graph presented below in the form $f(x) = ax^2 + bx + c$, assuming $a = 1$ or $a = -1$. Then, choose the intervals that $a, b,$ and c belong to.



A. $a \in [0.9, 1.7], \quad b \in [-5, 1], \text{ and } \quad c \in [-3, 2]$

B. $a \in [-1.1, -0.7], \quad b \in [-5, 1], \text{ and } \quad c \in [-12, -9]$

C. $a \in [0.9, 1.7], \quad b \in [-5, 1], \text{ and } \quad c \in [10, 11]$

D. $a \in [-1.1, -0.7], \quad b \in [1, 6], \text{ and } \quad c \in [-12, -9]$

E. $a \in [0.9, 1.7], \quad b \in [1, 6], \text{ and } \quad c \in [-3, 2]$

---

22. Solve the quadratic equation below. Then, choose the intervals that the solutions x_1 and x_2 belong to, with $x_1 \leq x_2$.

$$25x^2 - 60x + 36 = 0$$

A. $x_1 \in [29.89, 30.07]$ and $x_2 \in [28.82, 30.39]$

B. $x_1 \in [0.29, 0.4]$ and $x_2 \in [2.8, 5.36]$

C. $x_1 \in [0.98, 1.27]$ and $x_2 \in [0.98, 1.24]$

D. $x_1 \in [0.5, 0.69]$ and $x_2 \in [2, 2.82]$

E. $x_1 \in [0.18, 0.24]$ and $x_2 \in [5.82, 8.14]$

---

23. Factor the quadratic below. Then, choose the intervals that contain the constants in the form $(ax+b)(cx+d); b \leq d$.

$$54x^2 - 57x + 10$$

A. $a \in [0.39, 1.72], \quad b \in [-45, -42], \quad c \in [0.4, 2.2], \text{ and } \quad d \in [-14, -6]$

B. $a \in [1.62, 2.98], \quad b \in [-7, -1], \quad c \in [26.1, 27.8], \text{ and } \quad d \in [-3, 0]$

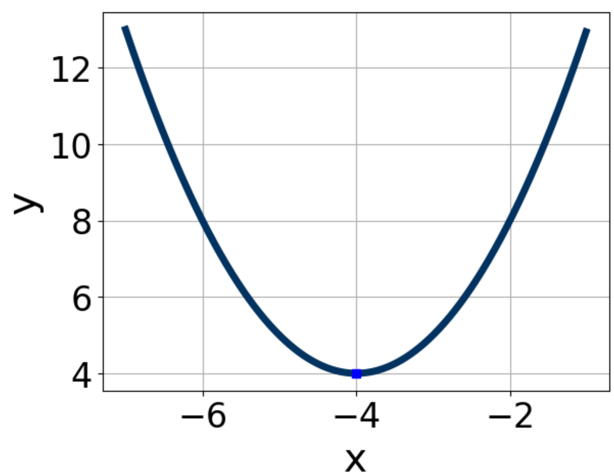
C. $a \in [5.69, 6.25], \quad b \in [-7, -1], \quad c \in [7.2, 9.6], \text{ and } \quad d \in [-3, 0]$

D. $a \in [11.54, 12.85], \quad b \in [-7, -1], \quad c \in [3.6, 6.5], \text{ and } \quad d \in [-3, 0]$

E. None of the above.

---

24. Write the equation of the graph presented below in the form $f(x) = ax^2 + bx + c$, assuming $a = 1$ or $a = -1$. Then, choose the intervals that $a, b,$ and c belong to.



A. $a \in [-1.8, 0.9], \quad b \in [-9, -4], \text{ and } \quad c \in [-15, -11]$

B. $a \in [-0.6, 1.1], \quad b \in [-9, -4], \text{ and } \quad c \in [17, 22]$

C. $a \in [-0.6, 1.1], \quad b \in [7, 13], \text{ and } \quad c \in [17, 22]$

D. $a \in [-1.8, 0.9], \quad b \in [7, 13], \text{ and } \quad c \in [-15, -11]$

E. $a \in [-0.6, 1.1], \quad b \in [-9, -4], \text{ and } \quad c \in [12, 13]$

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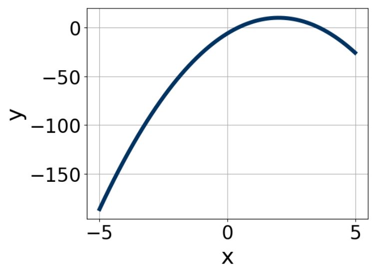
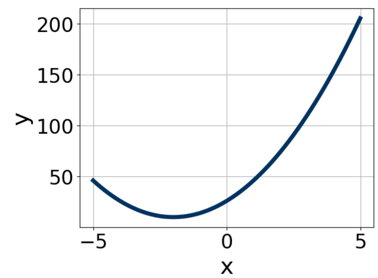
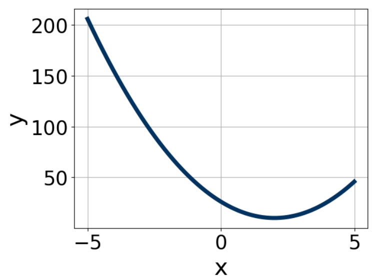
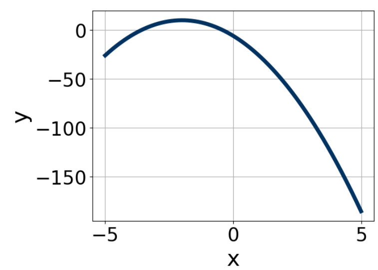
25. Graph the equation below.

$$f(x) = -(x+2)^2 + 10$$

A. 

C. 

B. 

D. 

E. None of the above.

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26. Solve the quadratic equation below. Then, choose the intervals that the solutions belong to, with $x_1 \leq x_2$ (if they exist).

$$18x^2 + 10x - 7 = 0$$

A. $x_1 \in [-25.15, -23.62]$ and $x_2 \in [23.8, 26]$

B. $x_1 \in [-0.79, 0.13]$ and $x_2 \in [0.9, 1.5]$

C. $x_1 \in [-17.42, -17.07]$ and $x_2 \in [6.4, 8.4]$

D. $x_1 \in [-0.99, -0.95]$ and $x_2 \in [-0.2, 0.9]$

E. There are no Real solutions.

---

27. Solve the quadratic equation below. Then, choose the intervals that the solutions x_1 and x_2 belong to, with $x_1 \leq x_2$.

$$20x^2 - 21x - 54 = 0$$

A. $x_1 \in [-3.95, -3.57]$ and $x_2 \in [0.52, 2.17]$

B. $x_1 \in [-24.11, -23.57]$ and $x_2 \in [44.9, 46.39]$

C. $x_1 \in [-6.19, -5.88]$ and $x_2 \in [-0.33, 0.48]$

D. $x_1 \in [-1.76, -1.17]$ and $x_2 \in [2.03, 2.41]$

E. $x_1 \in [-0.8, 0.32]$ and $x_2 \in [5.83, 7.15]$

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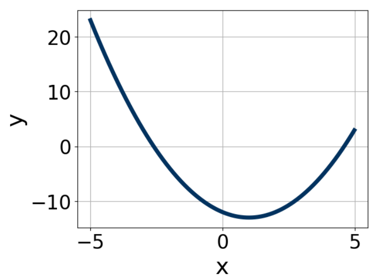
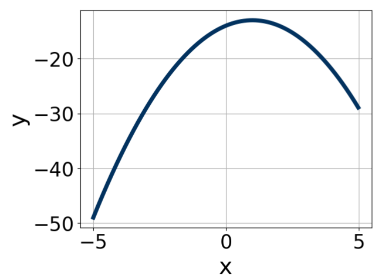
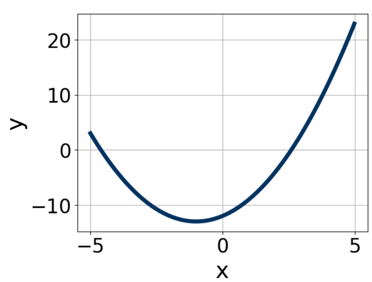
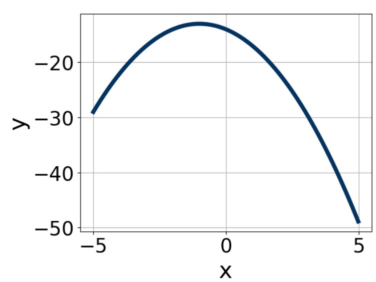
28. Graph the equation below.

$$f(x) = -(x-1)^2 - 13$$

A.


C.


B.


D.


E. None of the above.

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29. Solve the quadratic equation below. Then, choose the intervals that the solutions belong to, with $x_1 \leq x_2$ (if they exist).

$$12x^2 + 12x - 7 = 0$$

A. $x_1 \in [-0.86, 0.31]$ and $x_2 \in [0.8, 2.3]$

B. $x_1 \in [-22.76, -21.95]$ and $x_2 \in [21.3, 22.1]$

C. $x_1 \in [-1.58, -0.97]$ and $x_2 \in [-1.3, 0.9]$

D. $x_1 \in [-17.73, -16.66]$ and $x_2 \in [3.1, 6.8]$

E. There are no Real solutions.

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30. Factor the quadratic below. Then, choose the intervals that contain the constants in the form $(ax+b)(cx+d); b \leq d$.

$$36x^2 - 60x + 25$$

A. $a \in [-2.3, 2.1], \quad b \in [-31, -29], \quad c \in [0.8, 1.8], \text{ and } \quad d \in [-34, -25]$

B. $a \in [2.9, 4], \quad b \in [-5, -2], \quad c \in [11.6, 13.9], \text{ and } \quad d \in [-6, -2]$

C. $a \in [4.9, 6.6], \quad b \in [-5, -2], \quad c \in [3.4, 6.6], \text{ and } \quad d \in [-6, -2]$

D. $a \in [16.9, 18.3], \quad b \in [-5, -2], \quad c \in [1.5, 3.2], \text{ and } \quad d \in [-6, -2]$

E. None of the above.
